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2001-10-11

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Application No. / Patent No.	Ref.	Date
94 915 725.9-2303 / 0698162 /	2950767	20.09.2001
Proprietor: VÄLINGE ALUMINIUM AB		

DAGBOK
2001-12-21

Decision revoking the European Patent (Article 102(1), (3) EPC)

The Opposition Division - at the oral proceedings dated 04.09.2001 - has decided:

European Patent No. EP-B-0698162 is revoked.

The reasons for the decision are enclosed.

Possibility of appeal
This decision is open to appeal. Attention is drawn to the attached text of Articles 106 to 108 EPC.

Registered letter with advice of delivery
EPO Form 2331 04.00CSX

Opposition Division:

Chairman:	FESTOR E J M
2nd Examiner:	ROSBOROUGH J L
1st Examiner:	PLUGGE H B

Emer, W
Formalities Officer
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Enclosure(s): 18 page(s) reasons for the decision (Form 2916)
Wording of Articles 106 - 108 (Form 2019)
☒ Minutes of oral proceedings

to EPO postal service: 17.09.2001

Registered letter with advice of delivery
EPO Form 2331 04.00CSX

I. FACTS AND SUBMISSIONS

1. European patent No. 0698162 is based on European patent application number 94915725.9.

   Date of filing: 29-4-1994
   Claimed priority: 10-5-1993 (SE9301595)

   The mention of the grant of the patent was published in European Patent Bulletin 1998/38 of 16-9-1998

   Proprietor of the patent is:

   Välinge Aluminium AB
   260 40 Viken (SE)

2. Notices of Opposition to the European patent were filed as follows:

   O-I Unilin Decor N.V.
   Ooigemstraat 3
   B - 8710 Wielsbeke (BE)

   O-II Kronotex Fußboden GmbH
   Wittstocker Chaussee 1
   16909 Heiligengrabe (DE)

   O-III E. F. P. Floor Products
   Fußböden GmbH
   A - 6380 St. Johann i. Tirol (AT)

3. The following documents were referred to during the opposition proceedings:

   D1: Webster's Dictionary, p. 862, 192, PAMCO publishing Co. Inc. (New York)
   D2: DE2917025A
   D3: BE417526A
   D4: DE7402354U
   D5: US4426820A
   D6: GB2256023A

DX: US2740167
DW: US2430200

Approximately 40 additional documents were cited by the opponents during the proceedings. None are more relevant than those noted above. Reference is made to the file for details of the additional citations.

4. In its submissions filed on 16-1-1999 (the English language translation of the originally filed Dutch submissions received by the EPO on 7-1-1999) Opponent O-I requests revocation, under Articles 100(a), (b) and (c) EPC, of the patent in suit on the grounds that the entire patent does not meet the requirements of Articles 52 to 57 EPC.

   O-I contests the validity of the claim to priority of the patent in suit, and purports that the claims of the patent in suit contain added subject matter.

   O-I asserts that the patent in suit does not meet the requirements of Article 83 EPC as the invention claimed is insufficiently disclosed for a man skilled in the art to perform.

   Furthermore O-I asserts that the claimed invention is not novel, and does not support an inventive step, respectively, in light of the prior art cited.

   O-I requested oral proceedings in the event that the opposition division could not revoke the patent in its entirety. Further submissions were filed on 3-8-2001.

5. In its submissions filed on 4-5-1999 and 22-9-2000 O-II requested revocation of the patent in suit in its entirety.

6. O-III filed a notice of intervention under Article 105(1) EPC on 26-2-2000, with evidence of infringement proceedings relating to the patent in suit having been taken out against it by Norske Skog Flooring A. S., the exclusive licensee of the proprietor before the Handelsgericht Wien, in Austria.

7. In a submission received on 26-01-2000 the proprietor requested maintenance of the patent as granted, and subsidiarily, oral proceedings.

   The proprietor filed further submissions on 29-6-2000 and 9-8-2001. With the latter the proprietor filed two auxiliary requests.

8. With its summons to appear before the opposition division despatched on 10-4-2001 the opposition division set out its provisional opinion on a number of issues under contention. The parties were summoned to attend oral proceedings before the opposition division on 4-9-2001.

9. In the oral proceedings held on 4-9-2001 the opposition division revoked the patent after considering the proprietor's main request, namely rejection of the oppositions, and the auxiliary requests 1 (filed 9-8-2001) and 3, 6 and 7 (filed during the oral proceedings on 4-9-2001), all of which requests the proprietor expressly maintained in the oral proceedings on 4-9-2001.

10. Reference is made to the file for further details.

II. REASONS FOR THE DECISION

1. **Admissibility of the opposition**

The oppositions filed by O-I and O-II are admissible as they meet all the requirements of Articles 99(1) and 100 EPC and of Rules 1(1) and 55 EPC.

2. **Admissibility of the notice of intervention** (Article 105 EPC).

As the notice of intervention and the evidence submitted filed by O-III meets the requirements of Article 105(1) and (2) EPC, the notice is admissible and the intervention filed by O-III is treated as an opposition pursuant to Article 105(2) EPC.

3. **Priority validity**

O-I contests the validity of the priority of the patent in suit with regard to two issues.

However, as no prior art has been cited which was published subsequent to the priority date the question of the validity of the priority is irrelevant to the present proceedings and will not be considered further.

4. **Main Request**

The patent proprietors main request is that the patent be maintained in the form as granted.

Claim 1 of the patent in suit in the form as granted reads as follows:

> A system for providing a joint along adjacent joint edges (3, 4) of two building panels (1, 2), especially floor panels, in which joint:
> - the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and
> - a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4),

said locking device (6, 8, 14) comprising a locking groove (14) which extends parallel to and spaced from the joint edge (4) of one (2) of said panels, termed groove panel, and which is open at the rear side (16) of the groove panel (2), characterised in

- that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),
- that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is facing the joint edges and is operative in said second mechanical connection,
- that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) in the direction of the joint edges (3, 4), and
- that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

4.1 The main request cannot be allowed for the following reasons:

D6 discloses a joint between the adjoining side edges of two similar panels. The construction is essentially tongue and groove, and is intended in particular for the construction of a door.

The proprietor asserts that the following features included in claim 1 differentiate the subject matter of the claim from D6:

1. The system is suitable for floors,
2. The first and the second mechanical connection both allow mutual displacement of the panels in the direction of the joint edges, and
3. The panels, when joined together, can occupy a relative position in said second direction where a play (Δ) exists between the locking groove and a locking surface on the locking element that is facing the joint edges and is operative in said second mechanical connection, and
4. The second mechanical connection is so conceived as to allow the locking element to leave the locking groove if the groove panel is turned about its joint edge angularly away from the strip.

4.2 Claim 1 is not limited to a floor (joint), as it is directed to a system for providing a joint along adjacent joint edges of two building panels, *especially floor panels*. Furthermore, D6 explicitly discloses (cf. page 7, last paragraph) that the invention described therein may be used in any application where controlled spacing is desired to allow for expansion of the panels, *such as flooring*. The proprietor's contention therefore that D6 should be dismissed as being irrelevant to the field of the patent in suit cannot be followed.

4.3 The proprietor contends that the feature of claim 1 that *the first and the second mechanical connection both allow mutual displacement of the panels in the direction of the joint edges* is not disclosed in D6. This feature is however broadly defined in the claim under consideration, and includes two possible variants. One is the possibility that the adjacent panels move *in a direction toward the joint* - that is to say, towards each other, and the other possibility is that the panels can move *along* the direction of the joint relative to each other. Figures 4 and 5 of D6 illustrate the end positions of the relative movements of the two adjacent panels *in a direction toward the joint.* Furthermore, as is clear from the panel section illustrated in figure 3 and the perspectives of figures 1 and 2, no projections or any other such features - which are generally known in the art - are disclosed which could hinder the relative movement of mated adjacent panels in a direction parallel to the joint. Even if the fit were tight - which is not explicitly described as being the case in D6 - a movement would be possible if the force applied were of sufficient magnitude. Claim 1 under consideration is silent on the magnitude of the force required to cause relative movement.

4.4 With regard to the matter of the presence of a play ($\triangle$) existing between the locking groove and a locking surface on the locking element that is facing the joint edges and is operative in said second mechanical connection, reference is made to figures 4 and 5 of D6 which illustrate the two end positions of relative lateral movement of adjacent panels, thus the end positions of the available "play." The panels are free to move towards and away from each other within the bounds provided by the rib (10) contacting the opposite sides of the recess (9). This feature of claim 1 of the patent in suit is therefore explicitly disclosed in D6.

The proprietor's arguments with regard to the play present in a device according to the patent in suit being small cannot be followed, as the claim is silent with regard to the magnitude of the play. The skilled man is free to read into the claim any magnitude of play, at least in the context of floor panels generally, and is not limited to a "small" play by any feature of claim 1, and in particular not to a smaller play than is disclosed in D6.

4.5 With regard to the feature that *the second mechanical connection is so conceived as to allow the locking element to leave the locking groove if the groove panel is turned about its joint edge angularly away from the strip* it is noted that on page 5 of the description of D6 it is stated that, "the tip of the tongue (5) is provided on opposite sides with respective chamfer faces (15a,15b) such that the panel can tilt relative to the panel (1) with the tongue partially inserted into the groove (6) **for locating the rib (10) in the recess (9).**" The teaching here is that the tongue and groove are so arranged and have a geometry such that the rib can be located in the groove when inserting the tongue into the groove. It therefore goes without saying that when reversing the movement, for unlocking the two panels from each other, the geometry will allow the rib to exit the recess when the panel is tilted. It is noted that the geometry of the joint shown in figure 5 does not in fact illustrate the feature described (on page 5 of D6), but this does not obviate the presence of the teaching in D6.

Furthermore, although D6 is silent on the matter of dismantling the assembled panels, disassembly would always be possible, even if some damage were to occur during the process. The scope of the claim does not preclude such damage occurring, as it simply states that the second mechanical connection *is so conceived* as to allow the locking element to leave the locking groove if the groove panel is turned about its joint edge, without any description of the features which would provide this functionality.

4.6 For these reasons claim 1 of the patent in suit can be read on to the teaching of prior art document D6, so that the claim lacks novelty.

The main request can therefore not be allowed pursuant to Article 100(a) EPC.

5. **First Auxiliary Request**

The first auxiliary request can also not be allowed, for the following reasons:

Claim 1 according to the first auxiliary request reads as follows:

> A system for providing a joint along adjacent joint edges (3, 4) of two floor ~~building~~ panels (1, 2), ~~especially floor panels,~~ in which joint:
> - the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and
> - a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second

direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which extends parallel to and spaced from the joint edge (4) of one (2) of said panels, termed groove panel, and which is open at the rear side (16) of the groove panel (2), characterised in

- that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),
- that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is facing the joint edges and is operative in said second mechanical connection,
- that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) in the direction of the joint edges (3, 4), and
- that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

5.1 Claim 1 of the first auxiliary request is directed to a system for providing a joint along adjacent joint edges of two floor panels.

As set out in §4.2, above, D6 explicitly discloses that the invention described therein may be used in any application where controlled spacing is desired to allow for expansion of the panels, *such as flooring* (see in particular page 7, last paragraph of D6).

With regard to the other features of claim 1 according the first auxiliary request, the same comments as set out above in §4.3 to §4.5 apply.

Claim 1 of the first auxiliary request is therefore also considered to be anticipated by the teaching of D6, so that the first auxiliary request is also not allowable.

6. Second Auxiliary Request

During the oral proceedings on 4-9-2001 the proprietor withdrew Auxiliary Request No. 2.

7. Third Auxiliary Request

The third auxiliary request can also not be allowed, for the following reasons:

Claim 1 according to the third auxiliary request reads as follows (the amendments w.r.t claim 1 as granted are indicated):

> A system for providing a high quality joint along adjacent joint edges (3, 4) of two floor ~~building~~ panels (1, 2) of a floating floor ~~especially floor panels,~~ in which joint:
> - the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and
> - a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which extends parallel to and spaced from the joint edge (4) of one (2) of said panels, termed groove panel, and which is open at the rear side (16) of the groove panel (2), characterised in
> - that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),
> - that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is facing the joint edges and is operative in said second mechanical connection,
> - that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) ~~in~~ along the direction of the joint edges (3, 4), and
> - that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

7.1 Claim 1 of the third auxiliary request infringes Article 123(2) EPC.

There is no support in the originally filed application for adding the term "high quality" with reference to the joint. The originally filed application states (on page 6, line 3 and page 8, lines 5 and 6) that object of the invention is to provide a flooring which allows repeated assembly and disassembly of a floor . . *while ensuring high laying quality.*

These references to "high quality" are the only ones in the original filing, and they refer explicitly to the high quality of the *laying process* rather than to the final product. There is no support in the originally filed application for a claim directed to a high quality flooring.

For this reason claim 1 of the third auxiliary request contains subject matter which extends beyond that of the originally filed application, thus infringing Article 123(2) EPC. The third auxiliary request can therefore not be allowed.

7.2 Claim 1 of the third auxiliary request also infringes Article 84 EPC, as the subject matter of the claim is unclear. The "system", to which the claim is directed, does not explicitly contain the panels referred to therein, nor a fortiori the other three sides of the panel. The scope of the claim is therefore indeterminate.

8. **Fourth and Fifth Auxiliary Requests**

During the oral proceedings on 4-9-2001 the proprietor withdrew Auxiliary Requests 4 and 5.

9. **Sixth Auxiliary Request**

The sixth auxiliary request can also not be allowed, for the following reasons:

Claim 1 according to the sixth auxiliary request reads as follows (the amendments w.r.t claim 1 as granted are indicated):

> A floor comprising panels with ~~A system for providing~~ a joint along adjacent joint edges (3, 4) of two floor ~~building~~ panels (1, 2) in a floating flooring, in which the rear surface of the panels rests on a subfloor, ~~especially floor panels,~~ in which joint:
> - the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and
> - a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which is formed in the underside (16) of one (2) of the panels and extends parallel to and spaced from the joint edge (4) of this~~one (2) of said~~ panel~~s~~, termed groove panel, and which is open at the rear side (16) of the groove panel (2), characterised in
> - that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially

the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),

- that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is facing the joint edges and is operative in said second mechanical connection,
- that the panels (1, 2) are rectangular and designed for being mechanically locked to a similar panel at each of their four edges (3, 4, 3', 4'),
- that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) ~~in~~ along the direction of the joint edges (3, 4), and
- that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

9.1 Claim 1 of the sixth auxiliary is unclear, and does therefore not meet the requirements of Article 84 EPC.

Claim 1 is directed to a floor comprising panels with a joint along adjacent joint edges of two floor panels in a floating flooring, in which the rear surface of the panels rests on a subfloor.

In the characterising portion of the claim it is stated that the panels are rectangular and designed for being mechanically locked to a similar panel at each of their four edges.

It is unclear what should be understood by, and in particular the limitation of the wording, "designed for being mechanically locked" and the wording "similar panels."

With regard to the latter, the term may be understood to mean identical, but it may also be understood to refer to panels which are like, but different. How different is not defined in the claim, nor in the application as filed, which leads to obscurity with regard to the true scope of the claim.

With regard to the former it is noted that the term "mechanical connection" is extremely broad, and includes - amongst many others - the variants, glued, nailed, or screwed, or in fact joined by means of the joint system defined in claim 1 under consideration. The scope of the definition "designed for being mechanically locked" is therefore indeterminate as it includes panels which may be joined by any conceivable mechanical connection.

The proprietor refers in defence of the wording indicated to the support offered by claim 17 of the patent in suit, which reads

17. A system as claimed in any one of the preceding claims, characterised in that the panels (1, 2) are rectangular and intended, at each of their four edges (3, 4, 3', 4'), to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges (3, 4), one of which is provided with a strip (6) of the aforementioned type and the other of which is provided with a locking groove (14) of the aforementioned type, and a second pair of opposite joint edges (3', 4'), one of which is provided with a strip (6') of the aforementioned type and the other of which is provided with a locking groove (14') of the aforementioned type.

This claim however goes further than stating that the panels to be connected are similar, and that any mechanical connection may be used, by the further limitation that the panels have a first pair of opposite joint edges, one of which is provided with a strip of the aforementioned type and the other of which is provided with a locking groove of the aforementioned type, and a second pair of opposite joint edges, one of which is provided with a strip of the aforementioned type and the other of which is provided with a locking groove of the aforementioned type.

Claim 17 of the patent in suit therefore limits the scope to panels having the same joint system at all of its edges.

As claim 1 of the sixth auxiliary request does not have the same joint system at all of its edges, and, as set out above, includes all panels which may (are designed to) be joined by any conceivable mechanical connection, and because of the indeterminate word "similar" when referring to the panels which may be interconnected, the scope of the claim is indeterminate, and thus unclear. It does therefore not meet the requirements of Article 84 EPC and is not allowable.

10. Seventh Auxiliary Request

The seventh auxiliary request can also not be allowed, for the following reasons:

Claim 1 according to the seventh auxiliary request reads as follows (the amendments w.r.t claim 1 as granted are indicated):

A flooring comprising panels with ~~system for providing~~ a joint along adjacent joint edges (3, 4) of two ~~building panels (1, 2), especially~~ floor panels, in which joint:

- the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and
- a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which extends parallel to and spaced from the joint edge (4) of one (2) of said panels, termed groove panel, and which is open at the rear side (16) of the groove panel (2), characterised in
- that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),
- that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is facing the joint edges and is operative in said second mechanical connection,
- that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) ~~in~~ along the direction of the joint edges (3, 4), and
- that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6),
- that the panels (1, 2) are rectangular and intended, at each of their four edges (3, 4, 3', 4'), to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges (3, 4), one of which is provided with a strip (6) of the aforementioned type and the other of which is provided with a locking groove (14) of the aforementioned type, and a second pair of opposite joint edges (3', 4'), one of which is provided with a strip (6') of the aforementioned type and the other of which is provided with a locking groove (14') of the aforementioned type.

10.1 Claim 1 of the seventh auxiliary request does not infringe Article 123(2) or (3).

O-I asserts that claim 1 may infringe Article 123(3). He states that, as claim 1 as granted was unclear, it is not possible to determine whether the amended claim in fact defines a product with a broader scope than claim 1 as granted.

This argumentation cannot be followed. O-I was unable to indicate, when requested to do so, what product not falling under the scope of the granted claim 1 might fall within the scope of the amended claim, and the opposition division is of the opinion that the amendments undertaken to claim 1 are limitations, and thus lead to a scope which is a subset of that of the granted claim. The amended claim no longer refers to a generic joint which must be suitable for building panels, but refers specifically to a floor with the previously claimed joint. This is a limitation of the claim. The amended claim includes the feature that the four edges of the panels have the same type of joint detail (from granted claim 17). This feature is also a limitation.

The claims are also considered to comply with Article 123(2), as the amendments made have a basis in the original filing.

10.2 Claim 1 of the seventh auxiliary request is novel.
The most relevant prior art teaching to claim 1 is DW (US2430200). DW discloses a flooring with the following features of claim 1 of the seventh auxiliary request:

The flooring comprises panels with a joint along adjacent joint edges of two floor panels, in which joint:

- the adjacent joint edges together form a first mechanical connection locking the joint edges to each other in a first direction (D1) at right angles to the principal plane of the panels, and
- a locking device arranged on the rear side of the panels forms a second mechanical connection locking the panels to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges, said locking device comprising a locking groove which extends parallel to and spaced from the joint edge of one of said panels, termed groove panel, and which is open at the rear side of the groove panel, wherein
- the locking device further comprises a strip integrated with the other of said panels, termed strip panel, said strip extending throughout substantially the entire length of the joint edge of the strip panel and being provided with a locking element projecting from the strip, such that when the panels are joined together, the strip projects on the rear side of the groove panel with its locking element received in the locking groove of the groove panel,
- that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove and a locking surface on the locking element that is facing the joint edges and is operative in said second mechanical connection,
- that the first and the second mechanical connection both allow mutual displacement of the panels along the direction of the joint edges and
- that the second mechanical connection is so conceived as to allow the locking element to leave the locking groove if the groove panel is turned about its joint edge angularly away from the strip,
- that the panels are rectangular.

The following feature of claim 1 under consideration is not disclosed in DW:

> The panel is intended, at each of their four edges, to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges, one of which is provided with a strip of the aforementioned type and the other of which is provided with a locking groove of the aforementioned type, and a second pair of opposite joint edges, one of which is provided with a strip of the aforementioned type and the other of which is provided with a locking groove of the aforementioned type.

The proprietor asserts that as DW refers to prefabricated structures, and that the panels disclosed therein are intended to function as structural members (see column 1; lines 3 to 8: column 2; line 3, and column 1; lines 23 - 25), and not as high quality floors in the context of claim 1. The opposition division does not concur with this argument. Claim 1 under consideration is directed to a flooring comprising panels with a joint along adjacent joint edges of two floor panels. This does not exclude that the flooring is a structural floor in the context of prior art document DW. Though the description of the patent in suit suggests that the flooring is of a particular quality, the claim under consideration is not limited to any particular class of floors.

The proprietor asserts that DW fails to disclose a groove in the context of claim 1 (a locking groove which extends parallel to and spaced from the joint edge of one of said panels, termed groove panel, and which is open at the rear side of the groove panel). He asserts that DW discloses a flat panel with depending portions rather than a groove in the rear face of the panel, namely the "portion" (5) and the "member" (7) with "tongue" (17). The opposition division is of the opinion however that the term groove may be broadly read, and the space bounded by the groove "walls," namely the portion (5) and the member (7), and the groove "base," namely the rear face ("under surface" (6)) of the panel may be considered to form a wide and shallow groove.

The proprietor asserts that DW does not disclose a play in the sense of claim 1 under consideration. The opposition division notes, however, that in figures 1 (plan view) and 2 (side elevation) there is a clear indication of a space between the adjacent upper panel edges, and a space between the tongue (7) and the groove base. Clearly, from figures 1 and 2, a relative movement of the panels toward each other is possible until either the adjacent upper panel edges meet or the tongue (7) and the groove base connect. No features are disclosed that could hinder such a movement. This movement falls within the scope of the description of the play in claim 1 under consideration, namely, that the panels, when joined together, can occupy a relative position in said second direction (D2) where a

play (Δ) exists between the locking groove and a locking surface on the locking element that is facing the joint edges and is operative in said second mechanical connection.

The proprietor asserts that there is no disclosure of a sliding action in DW. DW discloses, however, in the part of the description relating to figures 4 and 5 (see column 2; lines 40 - 46) *that in the form of the invention shown in figures 4 and 5, the projections or tongues (7) are serrated, and that the serration provides a spacing (21) between two projections. The other member is adapted to interlock with the projections.* And in column 3; lines 16 - 21 it is stated, *in the case of the form of the invention shown in figures 4 and 5, the serrated projections, by entering the serrate recesses not only provides a joint with resists tension . . . resists shear along the joint."* It must be concluded therefore that in the form of the invention according to figures 1 to 3, these serrations are absent. While there is no disclosure of intentional relative displacement of the panels along the joint, there is, in the form of the invention illustrated in figures 1 to 3, no disclosure of a feature which could hinder such a relative movement, so that the feature of claim 1 under consideration, that *"the first and the second mechanical connection both allow mutual displacement of the panels along the direction of the joint edges"* applies equally to the embodiment illustrated in figures 1 to 3 of DW.

Thus, as indicated above, the sole features differentiating the subject matter of the claim under consideration from the device disclosed in DW is that:

> The panel is intended, at each of their four edges, to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges, one of which is provided with a strip of the aforementioned type and the other of which is provided with a locking groove of the aforementioned type, and a second pair of opposite joint edges, one of which is provided with a strip of the aforementioned type and the other of which is provided with a locking groove of the aforementioned type.

10.3 The subject matter of claim 1 of the seventh auxiliary request does not support an inventive step, for the following reasons:

DW discloses a prefabricated structure, including panels suitable for use as floor panels. The panels disclosed in DW have mating edges, with a female and a male connector located at opposite edges. There is no disclosure in DW of a panel with connection features on all four edges as claimed in claim 1 under consideration.

The problem to be solved by the present invention may therefore be regarded as to provide

the flooring of DW with the features that would enable extendability in all four directions rather than just laterally.

The solution proposed in the claim under consideration cannot be considered as involving an inventive step (Articles 52(1) and 56 EPC). Given that the panels of DW can be extended in the lateral direction, it would be obvious for the man skilled in the art, when confronted with the problem set out above, to add the same connection details to the other two edges. In fact such connection details are widely known in the art. DX (US2740167) and D5 for example, both disclose a floor panel with the feature distinguishing claim 1 from DW.

For the reasons given above claim 1 of the seventh auxiliary request does not meet the requirements of Articles 52(1) and 56 with regard to inventive step. The seventh auxiliary request is therefore not allowable.

12. Conclusion

Even taking into consideration the amendments made by the proprietor of the patent during the opposition proceedings, the patent does not met the requirements of the Convention. The opposition division decided therefore that the European patent is revoked.

13. Additional Comments

In additional to the grounds for the decision of the opposition division set out above, the following observations of the opposition division are noted:

13.1 O-I asserts that the there is no support in the original filing for the embodiment claimed in claim 14 of the patent in suit (A system . . . in that the strip (6) is integrally formed with the strip panel (1), i.e. made in one piece with the strip panel (1)). O-I asserts that the original filing only disclosed embodiments with integral strips when a reinforcing strip (74) is used, so that there is only a basis for the combination of integral strips with a reinforcing strip.

The term "integrally formed" is a broad definition, covering both the case where two sections are fitted together to form an integral unit as well as the case where the base element and the strip are machined from the same material. The original filing discloses, explicitly, on page 12, in a description of the possible alternatives to the particular illustrated embodiment, that the strip 6 may be integrally formed with the strip panel. As the embodiment under discussion involves two sections that are fitted together, the alternative

referred to can only mean that the base element and the strip are machined from the same material. The embodiment illustrated in figure 5 and described on pages 17 and 18 state explicitly that the strip and the locking element are integrally formed, and in this particular embodiment disclose a reinforcing strip 74. There is therefore no compulsion when reading the original filing that in the case where the base element and the strip are machined from the same material a reinforcing strip is necessary. The combination of the integrally formed strip panel and base element with a reinforcing strip is therefore considered by the opposition division to be a preferred embodiment of the invention, according to the original filing.

13.2 O-I contests the validity of the priority of the patent in suit with regard to two issues: The first involves the "play" which O-I submits was not disclosed in the priority document (SE9301595-6). The second concerns an assertion that there is no basis for a priority right for the embodiment (as claimed in claim 14) of the patent in suit that the panel is made in one piece with the strip (6).

It is noted that the proprietor did not comment on these submissions. It is also noted that the priority document appears to not disclose these features, so that the claimed priority is invalid for these particular features. However, as no prior art was cited in the proceedings which was published subsequent to the priority date the question of the validity of the priority is irrelevant to the present proceedings and was not considered further.

Article 106
Decisions subject to appeal

(1) An appeal shall lie from decisions of the Receiving Section, Examining Divisions, Opposition Divisions and the Legal Division. It shall have suspensive effect.

(2) An appeal may be filed against the decisions of the Opposition Division even if the European patent has been surrendered or has lapsed for all the designated States.

(3) A decision which does not terminate proceedings as regards one of the parties can only be appealed together with the final decision, unless the decision allows separate appeal.

(4) The apportionment of costs of opposition proceedings cannot be the sole subject of an appeal.

(5) A decision fixing the amount of costs of opposition proceedings cannot be appealed unless the amount is in excess of that laid down in the Rules relating to Fees.

Article 107
Persons entitled to appeal and to be parties to appeal proceedings

Any party to proceedings adversely affected by a decision may appeal. Any other parties to the proceedings shall be parties to the appeal proceedings as of right.

Article 108
Time limit and form of appeal

Notice of appeal must be filed in writing at the European Patent Office within **two months** after the date of notification of the decision appealed from. The notice shall not be deemed to have been filed until after the fee for appeal has been paid. Within **four months** after the date of notification of the decision, a written statement setting out the grounds of appeal must be filed.

Further information concerning the filing of an appeal

(a) The appeal is to be filed with the European Patent Office either at its seat in Munich, at its branch at The Hague or at its Berlin sub-office. The postal addresses are as follows:

(i) European Patent Office
D-80298 Munich
Germany
(Telex: 523656 epmu d)
(Fax: +49 89 2399-4465)

(ii) European Patent Office
Branch at The Hague
Patentlaan 2
Postbus 5818
NL-2280 HV Rijswijk (ZH)
Netherlands
(Telex: 31651 epo nl)
(Fax: +31 70 340-3016)

(iii) European Patent Office
Berlin sub-office
D-10958 Berlin
Germany
(Fax: +49 30 25901-840)

(b) The notice of appeal must contain the name and address of the appellant in accordance with the provisions of Rule 26(2)(c) EPC, and a **statement** identifying the decision which is impugned and the extent to which amendment or cancellation of the decision is requested (see Rule 64 EPC). The notice of appeal and any subsequent submissions stating the grounds for appeal must be signed.

(c) Notice of appeal must be **filed in writing** (typewritten or printed (Rule 36(2) EPC), by telegram, telex or fax (Rule 36(5) EPC; OJ EPO 6/89, 219-225; OJ EPO 9/89, 396)).

(d) The fee for appeal is laid down in the Rules relating to Fees. The equivalents in the national currencies in which the fee for appeal can be paid are regularly published in the Official Journal of the European Patent Office under the heading "Guidance for the payment of fees, costs and prices".

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Europäisches Patentamt	European Patent Office	Office européen des brevets
Generaldirektion 2	Directorate General 2	Direction Générale 2

Andersson, Per-Olof
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Box 5117
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SUEDE

Application No. / Patent No.	Ref.	Date
94 915 725.9-2303 / 0698162 /	2950767	20.09.2001
Proprietor VÄLINGE ALUMINIUM AB		

Provision of a copy of the minutes in accordance with Rule 76(4) EPC

The attached copy of the minutes of the oral proceedings is sent to you in accordance with Rule 76(4) EPC.

Emer, W
Formalities Officer
Tel. No.:+49 89 2399-2972

Enclosure(s): Copy of the minutes (Form 2309)

Application No.: 94 915 725.9

Patent No.: EP 0698162 B

Minutes of the oral proceedings before the OPPOSITION DIVISION

The proceedings were public.

Proceedings **opened** on 04.09.2001 at 09.15 hours

Present as members of the opposition division:

Chairman: FESTOR E J M
1st member: PLUGGE H B
2nd member: ROSBOROUGH J L

Minute writer: ROSBOROUGH J L

Present as or for the party or parties:

- For the Proprietor(s): VÄLINGE ALUMINIUM AB

  B-G.Wallin, T.Schuster and S. Giver, accompanied by D.Pervan, G.Barth, I.J.F.P.Gorus and Ms. Pervan-Lindeborg.

- For the Opponent 1: UNILIN DECOR N.V.

  A.Hammond accompanied by G.A.van Hooydonck, F.Tack and B.P.J.Thiers.

- For the Opponent 2: KRONOTEX Fussboden GmbH

  T.Rehmann accompanied by H.Hecht.

- For the Opponent 3: E.F.P. Floor Products Fussböden GmbH

  T.Rox.

The identity of the person/s (as well as, if applicable, that of the witness or witnesses) and, where necessary, the authorisation to represent/authority to act were checked.

Essentials of the discussion and possible relevant statements of the parties:

1. The chairman opened the oral proceedings at **9:15.**

2. In response to enquiry by the chairman, **Opponent 01** stated his request as to **revoke the patent in its entirety, according to each of the requests, on the basis of Articles 100(a) and (c) EPC.** He added that, dependent on the form of auxiliary requests which the patent proprietor may submit in the course of the oral proceedings, he may also request revocation on the basis of Article 100(b) EPC.

3. In response to enquiry by the chairman, **Opponent 02** stated his request as to **revoke the patent in its entirety according to each of the requests.**

4. In response to enquiry by the chairman, **Opponent 03** stated his request as to **revoke the patent in its entirety according to each of the requests.**

5. In response to enquiry by the chairman, the patent proprietor stated his requests as follows:

6. **Main request**: to maintain the patent as granted.

7. **First auxiliary request**: to maintain the patent in amended form on the basis of claims 1 to 22 as submitted with letter on 09.08.2001.

8. **Second auxiliary request**: to maintain the patent in amended form on the basis of claims 1 to 21 as submitted with letter on 09.08.2001.

9. The chairman stated that the validity of the claimed priority and possible infringement of Articles 123(2) and (3) EPC would be discussed when relevant.

10. The chairman invited the patent proprietor to submit his arguments relating to the **novelty of the subject-matter of claim 1 of the main request** with respect to document D6 (=GB-A-2256023).

11. In his argumentation the patent proprietor referred to WO97/47834, page 2, line 34 et. seq. wherein the subject-matter of D6 is described as not suitable for flooring. He also distributed a set of figures A-E representing his interpretation of

the functionallity of the joint according to D6 to all parties (see Annex I to these minutes).

12. The first member referred to D6, page 7, third last line where reference is made to the possible use of the invention according to said document in flooring. He further referred to the term "... suitable for ..." in claim 1, pointing out that this specified a generic definition of the subject-matter of claim 1.

13. At the invitation of the chairman, opponents OI, OII and OIII submitted argumentation that the subject-matter of claim 1 of the main request was not novel with respect to document D6.

14. At the invitation of the chairman, the patent proprietor responded to the arguments of the first member and the opponents, stating *inter alia* that there is no disclosure in D6 of the presence of the possibility of a "... mutual displacement of the panels in the direction of the joint edges..."

15. The chairman pointed out that the expression "... in the direction of the joint edges..." is ambiguous, as it could be interpreted as meaning either towards or along said edges.

16. The patent proprietor requested that he be allowed time to consider the chairman's comment.

17. The chairman interrupted the proceedings from **10.10 - 10.25** to permit the patent proprietor to deliberate on the alleged ambiguity of said expression.

18. On resumption, the first member, noting that thepatent proprietor was using lap-top computers and earphones, referred all parties to the EPO Guidelines which state that sound recordings during oral proceedings are not permitted.

19. The patent proprietor stated that he was not recording the proceedings.

20. In response to the chairman's comments relating to the alleged ambiguity of the statement "... mutual displacement of the panels in the direction of the joint

edges..." the patent proprietor submitted that it is clear in the context of the entire content of the patent that "... mutual displacement of the panels along the direction of the joint edges..." is meant and offered to amend the text of his request if considered necessary.

21. At the invitation of the chairman, opponents OI, OII and OIII submitted further argumentation that the subject-matter of claim 1 of the main request was not novel with respect to document D6.

22. At the invitation of the chairman, the patent proprietor responded to the arguments of the opponents.

23. The chairman stated that, due to the similarity of the claims of the requests, the **novelty of the subject-matter of claim 1 of the first auxiliary request** could be discussed before interrupting the proceedings for deliberation by the examining division.

24. At the invitation of the chairman, the patent proprietor submitted argumentation that the subject-matter of claim 1 of the first auxiliary request was novel.

25. At the invitation of the chairman, opponents OI, OII and OIII submitted argumentation that the subject-matter of claim 1 of the first auxiliary request was not novel, referring to document D6 as being the closest prior art document.

26. At the invitation of the chairman, the patent proprietor responded to the arguments of the opponents.

27. The chairman interrupted the proceedings from **10.45 - 11.12** to permit the opposition division to deliberate. On resumption the chairman announced that the opposition division is of the opinion that the subject-matter of claim 1 of the **main request is not novel** with respect to D6 and that the subject-matter of claim 1 of the **first auxiliary request is not novel** with respect to D6.

28. The patent proprietor withdrew his second auxiliary request and submitted a **third, fourth and fifth auxiliary request,** copies of which were distributed to the

opponents OI,OI and OIII.

29. After approximately ten minutes, and in response to enquiry by the chairman, the opponents OI,OII and OIII stated that they had had enough time to consider the third, fourth and fifth auxiliary requests.

30. The opponents OI,OII and OIII each submitted that claim 1 of the third auxiliary request contained added subject-matter and therefore contravened Article 123(2) EPC. The alleged added subject-matter concerned the addition of the term "...high quality ..." with reference to the joint, whereas said term is contained in the application with reference to the laying of the floor.

31. The patent proprietor stated that he would be prepared to amend the third auxiliary request and requested that he be allowed time to consider the opponents' comments.

32. The chairman interrupted the proceedings from **11.45 - 12.00** to permit the patent proprietor to deliberate on the opponents' comments.

33. On resumption, the **patent proprietor withdrew his third auxiliary request.**

34. At the invitation of the chairman, the patent proprietor identified a number of locations in the originally filed application which he submitted served as a basis for the additional features of claim 1 of the **fourth** auxiliary request.

35. After approximately five minutes, and in response to enquiry by the chairman, the opponents OI,OII and OIII stated that they had had enough time to consider the said bases for the additional features of claim 1 of the **fourth auxiliary request.**

36. Opponent OI referred to Rule 71(a) EPC, noted that no new documents had been cited, and submitted that there was therefore no reason to consider the three auxiliary requests submitted during the present proceedings.
He contended that there was no basis in the European patent application as originally filed for any of the additional features of claim 1 of the fourth auxiliary request, so that said request contravened Article 123(2) EPC.

37. Opponent OII submitted that additional features, recited in the originally-filed application as being related to the feature "... floating floors ..." must also be incorporated in claim 1 of the fourth auxiliary request in order to meet the requirements of Article 123(2) EPC.

38. The patent proprietor contested the submissions of the opponents.

39. Opponent OI requested that he be allowed time to consider the fourth auxiliary request.

40. The chairman interrupted the proceedings from **12.10 - 12.25** to permit opponent OI to consider the fourth auxiliary request.

41. On resumption, opponent OI provided arguments in support of his submission that the fourth auxiliary request contravened Article 123(2) EPC.

42. The patent proprietor contested the arguments of opponent OI.

43. Opponents OI, OII and OIII provided further arguments in support of their submission that the fourth auxiliary request contravened Article 123(2) EPC.

44. The chairman pointed out that the "... system ..." claimed in claim 1 of the fourth auxiliary request does not explicitly contain the panel referred to therein, nor, a fortiori, the other three edges of the panel, so that there was a lack of clarity. He added that an amendment of said claim to concern "a flooring system" may contravene Article 123(3) EPC.

45. The patent proprietor requested that he be allowed time to consider the chairman's comments.

46. The chairman interrupted the proceedings from **12.45 - 13.30** for lunch and to permit the patent proprietor to consider the comments of the opposition division and opponents, and to prepare his response.

47. On resumption, the patent proprietor provided arguments in support of his

submission that the subject-matter of claim 1 of the fourth auxiliary request was neither unclear nor contravened Article 123(2) EPC.

48. Opponent OI again contended that said subject-matter was unclear.

49. Opponent OIII again contended that said subject-matter contravened Article 123(2).

50. The chairman interrupted the proceedings from **13.47 - 14.16** to permit the opposition division to deliberate. On resumption the chairman announced that the opposition division is of the opinion that the subject-matter of claim 1 of the **fourth auxiliary request meets the requirements of Article 123(2) EPC.**

51. Opponent OI noted that the opposition division had not provided an opinion with regard to the clarity of the subject-matter of claim 1 of the fourth auxiliary request.

52. At the invitation of the chairman, opponent OI submitted argumentation that the subject-matter of claim 1 of the fourth auxiliary request was not clear, in particular that it was not clear how the mechanical locking was achieved and which panels are mutually displaced. He noted that the EPO Guidelines state that an unclear feature can not be employed to distinguish the subject-matter of a claim from the prior art.

53. Opponent OII, noting that in claim 1, line 4 two floor panels are referred to while on page 2 of said claim "... the four edges ..." of a floor panel are mentioned, submitted that it is unclear why four edges should be relevant if the joint between only two panels is being referred to.

54. Opponent OIII reiterated the arguments of opponents OI and OII.

55. The patent proprietor contended that the subject-matter of claim 1 of the fourth auxiliary request was clear, submitting that the term "mechanical locking" meant locking by mechanical means, without glue, and that the expression "... a joint ... of two floor panels ..." was applied loosely to mean a joint which can be on any side of a panel.

56. Opponent OIII submitted that it was not clear what technical effect the four edges having the joint has.

57. The patent proprietor submitted that said feature limits the claimed system to that whereby it is on four sides of panels.

58. The chairman remarked that amending the designation of the subject-matter of claim 1 may overcome the clarity objections.

59. Opponent OI disagreed, arguing that not all of said objections would be thus overcome, and that a thus amended claim may contravene Article 123(3) EPC.

60. The patent proprietor submitted that it is clear to the skilled person what technical features belong to the subject-matter of claim 1.

61. The chairman interrupted the proceedings from **14.41 - 15.02** to permit the opposition division to deliberate. On resumption the chairman announced that the opposition division is of the opinion that the subject-matter of claim 1 of the **fourth auxiliary request is unclear.**
He announced further that, owing to the similarity of their texts, the opposition division is of the opinion that the subject-matter of claim 1 of the **fifth auxiliary request is also unclear.**

62. The patent proprietor submitted a **sixth auxiliary request** of which claim 1 commences "A floor comprising panels with ..." (see Annex V).

63. Opponent OI submitted that claim 1 of the sixth auxiliary request contravenes Article 123(3) EPC. He argued that, due to the unclarity of claim 1 of the patent as granted, it was impossible to ascertain its scope of protection. Consequently it was impossible to judge whether the scope of protection conferred by the claims of the sixth auxiliary request was extended with respect to those of the patent as granted.

64. Opponent OII submitted that claim 1 of the sixth auxiliary request was unclear as the parameters concerned by the term "similar" on page 2, line 4 are insufficiently

defined.

65. Opponent OIII also submitted that claim 1 of the sixth auxiliary request was unclear and contravened Article 123(3). He submitted that the expression "... can be mechanically locked ..." included any feature which may be glued, nailed or otherwise locked and that the expression "...similar panel ..." could include a covering on the panel. He submitted further that the change of designation from a "system" to a "floor" resulted in a contravention of Article 123(3) EPC.

66. The patent proprietor submitted that claim 1 had been limited to a floor which was within the scope of the claims of the patent as granted, and that the term "similar" was contained in claim 17 of the patent as granted and was therefore not a new feature.

67. The chairman stated that the expression "similar" does not mean "with the same connection features" and pointed out that the panels according to D6 are also mechanically lockable.

68. The patent proprietor withdrew his sixth auxiliary request and requested time to prepare a new auxiliary request.

69. The chairman interrupted the proceedings from **15.30 - 16.00** to permit the patent proprietor to prepare a new auxiliary request.

70. On resumption, the patent proprietor submitted a **seventh auxiliary request** of which claim 1 commences "A floor comprising panels with ..." (see Annex VI).

71. The chairman announced the opinion of the opposition division, formed during deliberation in the course of the interruption, that the aforementioned **amendment of the designation of the subject-matter of claim 1 of the sixth auxiliary request to "floor" does not contravene Article 123(3) EPC** and, since the designation of the subject-matter of claim 1 of the seventh auxiliary request also concerns a "floor", **claim 1 of the seventh auxiliary request does also not contravene Article 123(3) EPC.**

72. Opponents OI,OII and OIII submitted that claim 1 of the seventh auxiliary request was not clear.

73. Opponent OI requested an interruption for consultation with the other opponents.

74. The chairman interrupted the proceedings from **16.15 - 16.30** to permit opponent OI to consult with the other opponents.

75. On resumption, opponent OI submitted that the subject-matter of claim 1 of the seventh auxiliary request was novelty-destroyed by document DW (US-A-2,430,200).

76. Opponents OII and OIII concurred with the submission of Opponent OI.

77. The patent proprietor contended that the subject-matter of claim 1 of the seventh auxiliary request was novel with regard to DW.

78. Opponent OI reiterated his arguments for the lack of novelty of the subject-matter of claim 1 of the seventh auxiliary request.

79. Opponents OII and OIII stated that they had nothing to add to the comments of opponent OI.

80. The patent proprietor contended further that the subject-matter of claim 1 of the seventh auxiliary request was novel.

81. The chairman interrupted the proceedings from **17.12 - 17.30** to permit the opposition division to deliberate. On resumption the chairman announced that the opposition division is of the opinion that the subject-matter of claim 1 of the **seventh auxiliary request is novel** since DW does not disclose the four edges of the panel being provided with grooves and strips as required by said claim.

82. At the invitation of the chairman, opponent OI provided argumentation that the subject-matter of claim 1 of the seventh auxiliary request did **not involve an inventive step**. He referred to document DW and the common knowledge of the

skilled person, as disclosed for example in D5.

83. Opponent OII also submitted that the subject-matter of claim 1 of the seventh auxiliary request did not involve an inventive step. He referred to document D6 and the common knowledge of the skilled person, as disclosed for example in D5.

84. The patent proprietor submitted that document SE 450,141 represented the closest prior art.

85. Opponent OI reiterated that DW represented the closest prior art.

86. The patent proprietor contested the argumentation of the opponents.

87. The chairman invited the parties to confirm their requests.

88. The **patent proprietor confirmed his requests** as follows:

Main request - maintenance of the patent as granted.
First auxiliary request - as filed with letter on 09.08.2001.
Second auxiliary request - withdrawn.
Third auxiliary request - as filed during the oral proceedings (see Annex II).
Fourth auxiliary request - withdrawn.
Fifth auxiliary request - withdrawn.
Sixth auxiliary request - as filed during the oral proceedings (see Annex V).
Seventh auxiliary request - as filed during the oral proceedings (see Annex VI).

89. **Opponent OI** confirmed his request as: revocation of the patent in its entirety on the basis of each of the patent proprietor's requests.

90. **Opponent OII** confirmed his request as: revocation of the patent in its entirety on the basis of each of the patent proprietor's requests.

91. **Opponent OIII** confirmed his request as: revocation of the patent in its entirety on the basis of each of the patent proprietor's requests.

92. The chairman interrupted the proceedings from **18.08 - 18.30** to permit the opposition division to deliberate. On resumption the chairman announced that the opposition division is of the opinion that the subject-matter of claim 1 of the **seventh auxiliary request does not involve an inventive step.**
He announced further that the subject-matter of claim 1 of the **third auxiliary request, which was withdrawn previously and has been reintroduced, contravenes Articles 123(2) and 84 EPC, and that the subject-matter of claim 1 of the sixth auxiliary request, which was also withdrawn previously and has been reintroduced, is unclear and therefore contravenes Article 84 EPC.**

93. The chairman declared that, since the grounds for opposition prejudice the maintenance of the patent according to the main request as well as to any of the auxiliary requests, the opposition division decides to **revoke the patent in accordance with Article 102(1) EPC.**

94. The chairman closed the proceedings at **18.35.**

After deliberation of the opposition division,

- the chairman announced the following **decision**:

"The European patent is revoked."

Regarding the reasons for the decision, the chairman referred to:

The division's opinion that, even taking into consideration the amendments made by the proprietor of the patent during the opposition proceedings, the patent does **not** meet the requirements of the Convention (Article 102(3) EPC).

The chairman **closed the oral proceedings** on 04.09.2001 at 18.35 hours.

Signed:
FESTOR E J M
Chairman

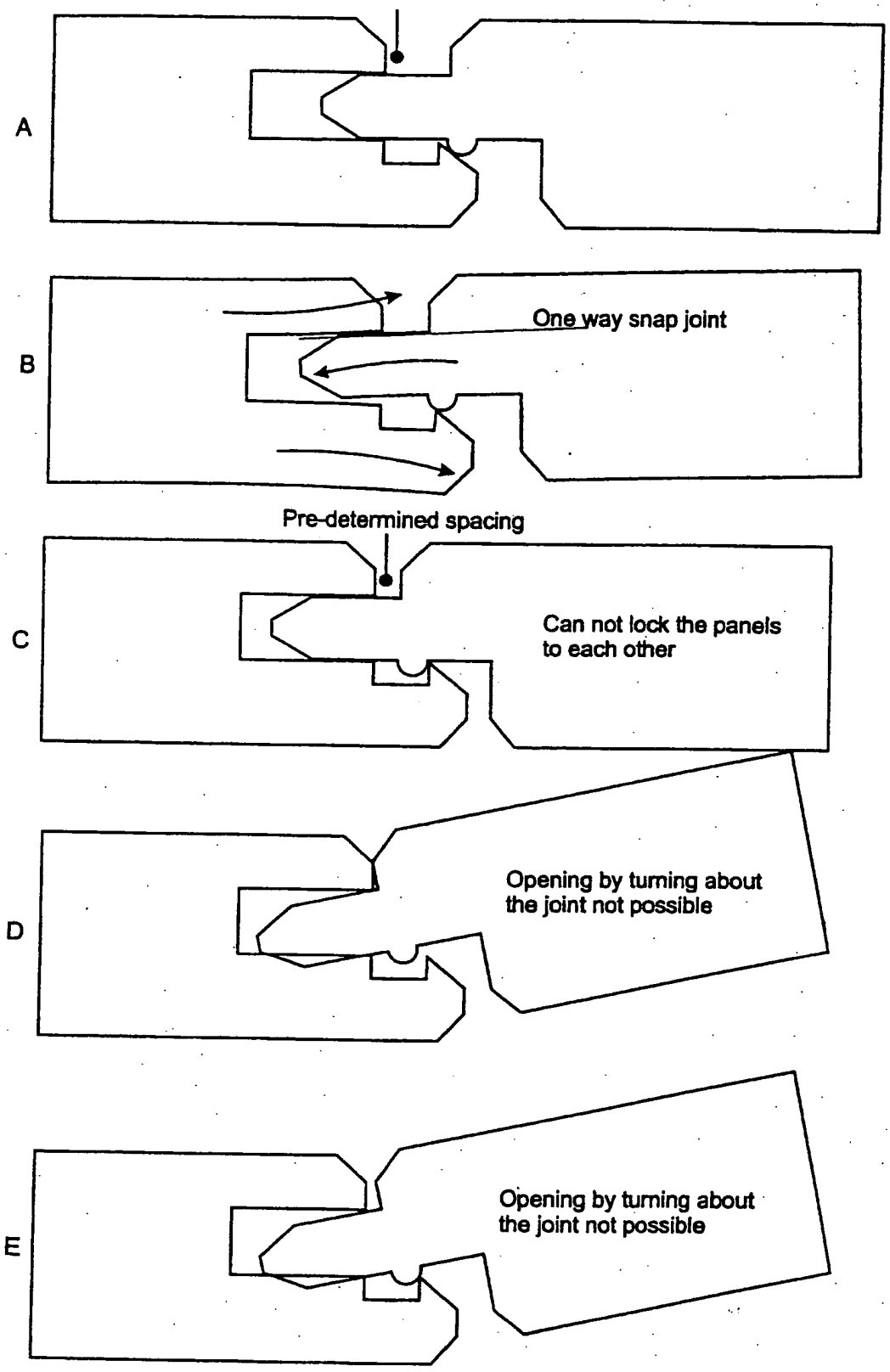
Signed:
ROSBOROUGH J L
Minute writer

Annex(es):
I: Figs. A-E.
II - VI: Auxiliary requests 3,4,5,6 and 7.

Filed in OP 4-9-01
by pat. prop.

GB 2 256 023 A

ANNEX I.
(1 OF 1)



BWS arbetsex

ANNEX II.

(1 OF 6)

3rd 2nd Auxiliary request filed 3/8 2001

CLAIMS

1. A system for providing a high quality joint along adjacent joint edges (3, 4) of two floor ~~building~~ panels (1, 2), of a floating floor, ~~espe-~~ ~~cially floor panels,~~ in which joint:

the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and

a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which extends parallel to and spaced from the joint edge (4) of one (2) of said panels, termed groove panel, and which is open at the rear side (16) of the groove panel (2), c h a r a c t e r i s e d in

that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),

that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is facing the joint edges and is operative in said second mechanical connection,

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that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) along the direction of the joint edges (3, 4), and

that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

2. A system as claimed in claim 1, c h a r a c t e r i s e d in that when the groove panel (2) is pressed against the strip panel (1) in said second direction (D2) and is turned angularly away from the strip (6), the maximum distance between the axis of rotation of the groove panel (2) and the locking surface of the locking groove (14) closest to the joint edges is such that the locking element (8) can leave the locking groove (14) without contacting the locking surface of the locking groove (14).

3. A system as claimed in claim 1 or 2, c h a r a c t e r i s e d in that the locking surface (10) of the locking element (8) is extended from the front side (22) of the strip (6) through a height in said first direction that is less than or equal to 2 mm.

4. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection is provided by the joint edge (4) of the groove panel (2) engaging, in said first direction, between the joint edge (3) of the strip panel (1) and the front side of the strip (6).

5. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the strip (6) integrated with the strip panel (1) is made of a material different from that of the strip panel (1) and fixedly mounted on the strip panel (1) at the factory.

6. A system as claimed in claim 5, c h a r a c t e r i s e d in that the strip (6), at least for one of the two panels (1, 2), is received in a countersunk groove (40; 42) in the rear side (18; 16) of this one panel (1; 2).

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(8) that is facing the joint edges and is operative in said second mechanical connection,

that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) in the direction of the joint edges (3, 4), and

that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

2. A system as claimed in claim 1, c h a r a c t e r i s e d in that when the groove panel (2) is pressed against the strip panel (1) in said second direction (D2) and is turned angularly away from the strip (6), the maximum distance between the axis of rotation of the groove panel (2) and the locking surface of the locking groove (14) closest to the joint edges is such that the locking element (8) can leave the locking groove (14) without contacting the locking surface of the locking groove (14).

3. A system as claimed in claim 1 or 2, c h a r a c t e r i s e d in that the locking surface (10) of the locking element (8) is extended from the front side (22) of the strip (6) through a height in said first direction that is less than or equal to 2 mm.

4. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection is provided by the joint edge (4) of the groove panel (2) engaging, in said first direction, between the joint edge (3) of the strip panel (1) and the front side of the strip (6).

5. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the strip (6) integrated with the strip panel (1) is made of a material different from that of the strip panel

punched from the strip (6) and which press against opposite outer sides of the gripping edge (52).

11. A system as claimed in claim 9, c h a r a c t e r i s e d that the mechanical connection characterised between the strip (6) and the strip panel (1) comprises a recess (58) in the rear side (18) of the strip panel, and tongues, lips or the like (60) which are bent or punched from the strip (6) and which press against opposing inner sides of the recess (58).

12. A system as claimed in any one of claims 5-11, c h a r a c t e r i s e d in that the strip (6) is fixed to the strip panel (1) by means of a binder.

13. A system as claimed in any one of claims 5-2, c h a r a c t e r i s e d in that the strip (6) is made of a flexible, preferably resilient material, such as sheet aluminium.

14. A system as claimed in any one of claims 1-4, c h a r a c t e r i s e d in that the strip (6) is integrally formed with the strip panel (1), i.e. made in one piece with the strip panel (1).

15. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the locking element (8) consists of a locking edge extended continuously along the strip (6).

16. A system as claimed in any one of claims 1-14, c h a r a c t e r i s e d in that the locking element (8) consists of a plurality of spaced-apart locking elements distributed throughout the length of the strip (6).

17. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the panels (1, 2) are rectangular and intended, at each of their four edges (3, 4, 3', 4'), to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first

pair of opposite joint edges (3, 4), one of which is provided with a strip (6) of the aforementioned type and the other of which is provided with a locking groove (14) of the aforementioned type, and a second pair of opposite joint edges (3', 4'), one of which is provided with a strip (6') of the aforementioned type and the other of which is provided with a locking groove (14') of the aforementioned type.

18. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that an underlay (46) of floor boards, foam, felt or the like is fixed to the rear sides (18, 16) of the panels.

19. A system as claimed in claim 18, c h a r a c t e r i s e d in that the underlay (46) is fixed so as to cover the strip (6) in said second direction at least up to the locking element (8), such that a joint between the underlays (46) of the two adjacent panels is offset in said second direction relative to the joint edges (3, 4).

20. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that a sealing means, such as a sealing compound, a rubber strip or the like, is provided on the front side (22) of the strip between the locking element (8) and the joint edge (3) of the strip panel to seal against the groove panel (2).

21. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to enter the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly towards the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact with the upper corner part of the joint edge (3) of the strip panel (1).

22. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact with the upper corner part of the joint edge (3) of the strip panel (1).

4 ~~rd~~ Auxiliary Request

CLAIMS

1. A system for providing a joint along adjacent joint edges (3, 4) of two floor ~~building~~ panels (1, 2) *in a floating flooring, in which the rear surface of the panels rests on a subfloor,* ~~especially floor panels,~~ in which joint:

the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and

a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which *is formed in the underside (16) of one (2) of the panels and* extends parallel to and spaced from the joint edge (4) of *this* ~~one (2) of said~~ panel~~s~~, termed groove panel, and which is open at the rear side (16) of the groove panel (2), c h a r a c t e r i s e d in

that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),

that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is

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ANNEX III.
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facing the joint edges and is operative in said second mechanical connection,

that the panels (1, 2) are rectangular and designed for being mechanically locked to a similar panel at each of their four edges (3, 4, 3', 4'),

that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) ~~in~~ along the direction of the joint edges (3, 4), and

that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

2. A system as claimed in claim 1, c h a r a c t e r i s e d in that when the groove panel (2) is pressed against the strip panel (1) in said second direction (D2) and is turned angularly away from the strip (6), the maximum distance between the axis of rotation of the groove panel (2) and the locking surface of the locking groove (14) closest to the joint edges is such that the locking element (8) can leave the locking groove (14) without contacting the locking surface of the locking groove (14).

3. A system as claimed in claim 1 or 2, c h a r a c t e r i s e d in that the locking surface (10) of the locking element (8) is extended from the front side (22) of the strip (6) through a height in said first direction that is less than or equal to 2 mm.

4. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection is provided by the joint edge (4) of the groove panel (2) engaging, in said first direction, between the joint edge (3) of the strip panel (1) and the front side of the strip (6).

5. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the strip (6) integrated with the strip panel (1) is made of a material different from that of the strip panel (1) and fixedly mounted on the strip panel (1) at the factory.

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6. A system as claimed in claim 5, c h a r a c - t e r i s e d in that the strip (6), at least for one of the two panels (1, 2), is received in a countersunk groove (40; 42) in the rear side (18; 16) of this one panel (1; 2).

7. A system as claimed in claim 5 or 6, c h a r - a c t e r i s e d in

that the strip (6) is mounted in an equalising groove (40) which is countersunk in the rear side (18) of the strip panel (1) and exhibits an exact, predetermined distance (E) from its bottom to the front side (21) of the strip panel (1),

that the part of the strip (6) projecting behind the groove panel (2) engages a corresponding equalising groove (42) which is countersunk in the rear side (16) of the groove panel (2) and which exhibits the same exact, predetermined distance (E) from its bottom to the front side (26) of the groove panel (2), and

that the strip (6) has at least such a thickness that the rear side (44) of the strip is flush with the rear sides (18, 16) of the panels.

8. A system as claimed in claim 7, c h a r a c - t e r i s e d in that the strip (6) has such a thickness that it is only partly received in the equalising grooves (40, 42).

9. A system as claimed in any one of claims 5-8, c h a r a c t e r i s e d in that the strip (6) is fixed to the strip panel (1) by means of a mechanical connection.

10. A system as claimed in claim 9, c h a r a c - t e r i s e d in that the mechanical connection between the strip (6) and the strip panel (1) comprises a gripping edge (52) defined by two recesses (24, 50) in the rear side (18) of the strip panel, and tongues, lips or the like (54, 56) which are bent or punched from the strip (6) and which press against opposite outer sides of the gripping edge (52).

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11. A system as claimed in claim 9, c h a r a c - t e r i s e d that the mechanical connection between the strip (6) and the strip panel (1) comprises a recess (58) in the rear side (18) of the strip panel, and tongues, lips or the like (60) which are bent or punched from the strip (6) and which press against opposing inner sides of the recess (58).

12. A system as claimed in any one of claims 5-11, c h a r a c t e r i s e d in that the strip (6) is fixed to the strip panel (1) by means of a binder.

13. A system as claimed in any one of claims 5-2, c h a r a c t e r i s e d in that the strip (6) is made of a flexible, preferably resilient material, such as sheet aluminium.

14. A system as claimed in any one of claims 1-4, c h a r a c t e r i s e d in that the strip (6) is integrally formed with the strip panel (1), i.e. made in one piece with the strip panel (1).

15. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the locking element (8) consists of a locking edge extended continuously along the strip (6).

16. A system as claimed in any one of claims 1-14, c h a r a c t e r i s e d in that the locking element (8) consists of a plurality of spaced-apart locking elements distributed throughout the length of the strip (6).

17. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the panels (1, 2) are rectangular and intended, at each of their four edges (3, 4, 3', 4'), to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges (3, 4), one of which is provided with a strip (6) of the aforementioned type and the other of which is provided with a locking groove (14) of the aforementioned type, and a second pair of opposite joint edges (3', 4'), one of which is provided with a strip

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(6') of the aforementioned type and the other of which is provided with a locking groove (14') of the aforementioned type.

18. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that an underlay (46) of floor boards, foam, felt or the like is fixed to the rear sides (18, 16) of the panels.

19. A system as claimed in claim 18, c h a r a c t e r i s e d in that the underlay (46) is fixed so as to cover the strip (6) in said second direction at least up to the locking element (8), such that a joint between the underlays (46) of the two adjacent panels is offset in said second direction relative to the joint edges (3, 4).

20. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that a sealing means, such as a sealing compound, a rubber strip or the like, is provided on the front side (22) of the strip between the locking element (8) and the joint edge (3) of the strip panel to seal against the groove panel (2).

21. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to enter the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly towards the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact with the upper corner part of the joint edge (3) of the strip panel (1).

22. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact

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with the upper corner part of the joint edge (3) of the strip panel (1).

5 Auxiliary Request

CLAIMS

1. A system for providing a joint along adjacent joint edges (3, 4) of two floor ~~building~~ panels (1, 2) *in a floating flooring, in which the rear surface of the panels rests on a subfloor,* ~~especially floor panels,~~ in which joint:

the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and

a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which *is formed in the underside (16) of one (2) of the panels and* extends parallel to and spaced from the joint edge (4) of *this* ~~one (2) of said~~ panel~~s~~, termed groove panel, and which is open at the rear side (16) of the groove panel (2), c h a r a c t e r i s e d in

that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),

that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is

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facing the joint edges and is operative in said second mechanical connection,

that the panels (1, 2) are rectangular with short and long edges and designed for being mechanically locked to similar panels at each of their four edges (3, 4, 3', 4'),

that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) ~~in along~~ the direction of the joint *long* edges (3, 4) *for joining together the short edges by snap action*, and

that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

2. A system as claimed in claim 1, c h a r a c t e r i s e d in that when the groove panel (2) is pressed against the strip panel (1) in said second direction (D2) and is turned angularly away from the strip (6), the maximum distance between the axis of rotation of the groove panel (2) and the locking surface of the locking groove (14) closest to the joint edges is such that the locking element (8) can leave the locking groove (14) without contacting the locking surface of the locking groove (14).

3. A system as claimed in claim 1 or 2, c h a r a c t e r i s e d in that the locking surface (10) of the locking element (8) is extended from the front side (22) of the strip (6) through a height in said first direction that is less than or equal to 2 mm.

4. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection is provided by the joint edge (4) of the groove panel (2) engaging, in said first direction, between the joint edge (3) of the strip panel (1) and the front side of the strip (6).

5. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the strip (6) integrated with the strip panel (1) is made of a material

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different from that of the strip panel (1) and fixedly mounted on the strip panel (1) at the factory.

6. A system as claimed in claim 5, c h a r a c - t e r i s e d in that the strip (6), at least for one of the two panels (1, 2), is received in a countersunk groove (40; 42) in the rear side (18; 16) of this one panel (1; 2).

7. A system as claimed in claim 5 or 6, c h a r - a c t e r i s e d in

that the strip (6) is mounted in an equalising groove (40) which is countersunk in the rear side (18) of the strip panel (1) and exhibits an exact, predetermined distance (E) from its bottom to the front side (21) of the strip panel (1),

that the part of the strip (6) projecting behind the groove panel (2) engages a corresponding equalising groove (42) which is countersunk in the rear side (16) of the groove panel (2) and which exhibits the same exact, predetermined distance (E) from its bottom to the front side (26) of the groove panel (2), and

that the strip (6) has at least such a thickness that the rear side (44) of the strip is flush with the rear sides (18, 16) of the panels.

8. A system as claimed in claim 7, c h a r a c - t e r i s e d in that the strip (6) has such a thickness that it is only partly received in the equalising grooves (40, 42).

9. A system as claimed in any one of claims 5-8, c h a r a c t e r i s e d in that the strip (6) is fixed to the strip panel (1) by means of a mechanical connection.

10. A system as claimed in claim 9, c h a r a c - t e r i s e d in that the mechanical connection between the strip (6) and the strip panel (1) comprises a gripping edge (52) defined by two recesses (24, 50) in the rear side (18) of the strip panel, and tongues, lips or the like (54, 56) which are bent or punched from the

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strip (6) and which press against opposite outer sides of the gripping edge (52).

11. A system as claimed in claim 9, c h a r a c - t e r i s e d that the mechanical connection between the strip (6) and the strip panel (1) comprises a recess (58) in the rear side (18) of the strip panel, and tongues, lips or the like (60) which are bent or punched from the strip (6) and which press against opposing inner sides of the recess (58).

12. A system as claimed in any one of claims 5-11, c h a r a c t e r i s e d in that the strip (6) is fixed to the strip panel (1) by means of a binder.

13. A system as claimed in any one of claims 5-2, c h a r a c t e r i s e d in that the strip (6) is made of a flexible, preferably resilient material, such as sheet aluminium.

14. A system as claimed in any one of claims 1-4, c h a r a c t e r i s e d in that the strip (6) is integrally formed with the strip panel (1), i.e. made in one piece with the strip panel (1).

15. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the locking element (8) consists of a locking edge extended continuously along the strip (6).

16. A system as claimed in any one of claims 1-14, c h a r a c t e r i s e d in that the locking element (8) consists of a plurality of spaced-apart locking elements distributed throughout the length of the strip (6).

17. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the panels (1, 2) are rectangular and intended, at each of their four edges (3, 4, 3', 4'), to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges (3, 4), one of which is provided with a strip (6) of the aforementioned type and the other of which is provided with a locking groove (14) of the

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aforementioned type, and a second pair of opposite joint edges (3', 4'), one of which is provided with a strip (6') of the aforementioned type and the other of which is provided with a locking groove (14') of the aforementioned type.

18. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that an underlay (46) of floor boards, foam, felt or the like is fixed to the rear sides (18, 16) of the panels.

19. A system as claimed in claim 18, c h a r a c t e r i s e d in that the underlay (46) is fixed so as to cover the strip (6) in said second direction at least up to the locking element (8), such that a joint between the underlays (46) of the two adjacent panels is offset in said second direction relative to the joint edges (3, 4).

20. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that a sealing means, such as a sealing compound, a rubber strip or the like, is provided on the front side (22) of the strip between the locking element (8) and the joint edge (3) of the strip panel to seal against the groove panel (2).

21. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to enter the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly towards the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact with the upper corner part of the joint edge (3) of the strip panel (1).

22. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away

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from the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact with the upper corner part of the joint edge (3) of the strip panel (1).

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6 3rd Auxiliary Request

CLAIMS

A floor comprising panels with

1. ~~A system for providing~~ a joint along adjacent joint edges (3, 4) of two floor ~~building~~ panels (1, 2) *in a floating flooring, in which the rear surface of the panels rests on a subfloor,* ~~especially floor panels,~~ in which joint:

the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and

a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which *is formed in the underside (16) of one (2) of the panels and* extends parallel to and spaced from the joint edge (4) of *this* ~~one (2) of said~~ panel~~s~~, termed groove panel, and which is open at the rear side (16) of the groove panel (2), c h a r a c t e r i s e d in

that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),

that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is

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facing the joint edges and is operative in said second mechanical connection,

that the panels (1, 2) are rectangular and designed for being mechanically locked to a similar panel at each of their four edges (3, 4, 3', 4'),

that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) ~~in~~ along the direction of the joint edges (3, 4), and

that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

2. A system as claimed in claim 1, c h a r a c t e r i s e d in that when the groove panel (2) is pressed against the strip panel (1) in said second direction (D2) and is turned angularly away from the strip (6), the maximum distance between the axis of rotation of the groove panel (2) and the locking surface of the locking groove (14) closest to the joint edges is such that the locking element (8) can leave the locking groove (14) without contacting the locking surface of the locking groove (14).

3. A system as claimed in claim 1 or 2, c h a r a c t e r i s e d in that the locking surface (10) of the locking element (8) is extended from the front side (22) of the strip (6) through a height in said first direction that is less than or equal to 2 mm.

4. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection is provided by the joint edge (4) of the groove panel (2) engaging, in said first direction, between the joint edge (3) of the strip panel (1) and the front side of the strip (6).

5. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the strip (6) integrated with the strip panel (1) is made of a material different from that of the strip panel (1) and fixedly mounted on the strip panel (1) at the factory.

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6. A system as claimed in claim 5, c h a r a c - t e r i s e d in that the strip (6), at least for one of the two panels (1, 2), is received in a countersunk groove (40; 42) in the rear side (18; 16) of this one panel (1; 2).

7. A system as claimed in claim 5 or 6, c h a r - a c t e r i s e d in

that the strip (6) is mounted in an equalising groove (40) which is countersunk in the rear side (18) of the strip panel (1) and exhibits an exact, predetermined distance (E) from its bottom to the front side (21) of the strip panel (1),

that the part of the strip (6) projecting behind the groove panel (2) engages a corresponding equalising groove (42) which is countersunk in the rear side (16) of the groove panel (2) and which exhibits the same exact, predetermined distance (E) from its bottom to the front side (26) of the groove panel (2), and

that the strip (6) has at least such a thickness that the rear side (44) of the strip is flush with the rear sides (18, 16) of the panels.

8. A system as claimed in claim 7, c h a r a c - t e r i s e d in that the strip (6) has such a thickness that it is only partly received in the equalising grooves (40, 42).

9. A system as claimed in any one of claims 5-8, c h a r a c t e r i s e d in that the strip (6) is fixed to the strip panel (1) by means of a mechanical connection.

10. A system as claimed in claim 9, c h a r a c - t e r i s e d in that the mechanical connection between the strip (6) and the strip panel (1) comprises a gripping edge (52) defined by two recesses (24, 50) in the rear side (18) of the strip panel, and tongues, lips or the like (54, 56) which are bent or punched from the strip (6) and which press against opposite outer sides of the gripping edge (52).

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ANNEX V.

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11. A system as claimed in claim 9, c h a r a c t e r i s e d that the mechanical connection between the strip (6) and the strip panel (1) comprises a recess (58) in the rear side (18) of the strip panel, and tongues, lips or the like (60) which are bent or punched from the strip (6) and which press against opposing inner sides of the recess (58).

12. A system as claimed in any one of claims 5-11, c h a r a c t e r i s e d in that the strip (6) is fixed to the strip panel (1) by means of a binder.

13. A system as claimed in any one of claims 5-2, c h a r a c t e r i s e d in that the strip (6) is made of a flexible, preferably resilient material, such as sheet aluminium.

14. A system as claimed in any one of claims 1-4, c h a r a c t e r i s e d in that the strip (6) is integrally formed with the strip panel (1), i.e. made in one piece with the strip panel (1).

15. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the locking element (8) consists of a locking edge extended continuously along the strip (6).

16. A system as claimed in any one of claims 1-14, c h a r a c t e r i s e d in that the locking element (8) consists of a plurality of spaced-apart locking elements distributed throughout the length of the strip (6).

17. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the panels (1, 2) are rectangular and intended, at each of their four edges (3, 4, 3', 4'), to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges (3, 4), one of which is provided with a strip (6) of the aforementioned type and the other of which is provided with a locking groove (14) of the aforementioned type, and a second pair of opposite joint edges (3', 4'), one of which is provided with a strip

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(6') of the aforementioned type and the other of which is provided with a locking groove (14') of the aforementioned type.

18. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that an underlay (46) of floor boards, foam, felt or the like is fixed to the rear sides (18, 16) of the panels.

19. A system as claimed in claim 18, c h a r a c t e r i s e d in that the underlay (46) is fixed so as to cover the strip (6) in said second direction at least up to the locking element (8), such that a joint between the underlays (46) of the two adjacent panels is offset in said second direction relative to the joint edges (3, 4).

20. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that a sealing means, such as a sealing compound, a rubber strip or the like, is provided on the front side (22) of the strip between the locking element (8) and the joint edge (3) of the strip panel to seal against the groove panel (2).

21. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to enter the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly towards the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact with the upper corner part of the joint edge (3) of the strip panel (1).

22. A system as claimed in any one of the preceding claims, c h a r a c t e r i s e d in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact

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ANNEX VI.

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groove 14 without coming into contact with it.

Figs 3a-3b show another joining method for mechanically joining together the floor panels of Figs 2a-c. The method illustrated in Figs 3a-c relies on the fact that the strip 6 is resilient and is especially useful for joining together the short sides of floor panels which have already been joined along one long side as illustrated in Figs 2a-c. The method of Figs 3a-c is performed by first placing the two panels 1 and 2 flat on the subfloor 12 and then moving them horizontally towards each other according to Fig. 3b. The inclined portion 36 of the locking element 8 then serves as a guide surface which guides the joint edge 4 of the groove panel 2 up on to the upper side 22 of the strip 6. The strip 6 will then be urged downwards while the locking element 8 is sliding on the equalising surface 42. When the joint edges 3, 4 have been brought into complete engagement with each other horizontally, the locking element 8 will snap into the locking groove 14 (Fig. 3c), thereby providing the same locking as in Fig. 2c. The same locking method can also be used by placing, in the initial position, the joint edge 4 of the groove panel with the equalising groove 42 on the locking element 10 (Fig. 3a). The inclined portion 36 of the locking element 10 then is not operative. This technique thus makes it possible to lock the floor panels mechanically in all directions, and by repeating the laying operations the whole floor can be laid without using any glue.

The invention is not restricted to the preferred embodiments described above and illustrated in the drawings, but several variants and modifications thereof are conceivable within the scope of the appended claims. The strip 6 can be divided into small sections covering the major part of the joint length. Further, the thickness of the strip 6 may vary throughout its width. All strips, locking grooves, locking elements and recesses are so dimensioned as to enable laying the floor panels with flat top sides in a manner to rest on the strip 6 in the joint. If the floor panels consist of compact laminate and if silicone or any other sealing compound, a rubber strip or any other sealing device is applied prior to laying between the flat projecting part of the strip 6 and the groove panel 2 and/or in the recess 26, a moisture-proof floor is obtained.

As appears from Fig. 6, an underlay 46, e.g. of floor board, foam or felt, can be mounted on the underside of the panels during the manufacture thereof. In one embodiment, the underlay 46 covers the strip 6 up to the locking element 8, such that the joint between the underlays 46 becomes offset in relation to the joint between the joint edges 3 and 4.

In the embodiment of Fig. 5, the strip 6 and its locking element 8 are integrally formed with the strip panel 1, the projecting part of the strip 6 thus forming an extension of the lower part of the joint edge 3. The locking function is the same as in the embodiments described above. On the underside 18 of the strip panel 1, there is provided a separate strip, band or the like 74 extending throughout the entire length of the joint and having, in this embodiment, a width covering approximately the same surface as the separate strip 6 of the previous embodiments. The strip 74 can be provided directly on the rear side 18 or in a recess formed therein (not shown), so that the distance from the front side 21, 25 of the floor to the rear side 76, including the thickness of the strip 74, always is at least equal to the corresponding distance in the panel having the greatest thickness tolerance. The panels 1, 2 will then rest, in the joint, on the strip 74 or only on the undersides 18, 16 of the panels, if these sides are made plane.

When using a material which does not permit downward bending of the strip 6 or the locking element 8, laying can be performed in the way shown in Fig. 5. A floor panel 2a is moved angled upwardly with its long side 4a into engagement with the long side 3 of a previously laid floor panel 1 while at the same time a third floor panel 2b is moved with its short side 4b' into engagement with the short side 3a' of the upwardly-angled floor panel 2a and is fastened by angling the panel 2b downwards. The panel 2b is then pushed along the short side 3a' of the upwardly-angled floor panel 2a until its long side 4b encounters the long side 3 of the initially-laid panel 1. The two upwardly-angled panels 2a and 2b are therefore angled down on to the subfloor 12 so as to bring about locking.

By a reverse procedure the panels can be taken up in the reverse order of laying without causing any damage to the joint, and be laid again.

Several variants of preferred laying methods are conceivable. For example, the strip panel can be inserted under the groove panel, thus enabling the laying of panels in all four directions with respect to the initial position.

Claims

1. ~~A system for providing~~ A floor comprising panels with a joint along adjacent joint edges (3, 4) of two ~~building panels (1, 2), especially~~ floor panels, in which joint:

the adjacent joint edges (3, 4) together form a first mechanical connection locking the joint edges (3, 4) to each other in a first direction (D1) at right angles to the principal plane of the panels (1, 2), and

a locking device (6, 8, 14) arranged on the rear side (18, 16) of the panels (1, 2) forms a second mechanical connection locking the panels (1, 2) to each other in a second direction (D2) parallel to the principal plane and at right angles to the joint edges (3, 4), said locking device (6, 8, 14) comprising a locking groove (14) which extends parallel to and spaced from the joint edge (4) of one (2) of said panels, termed groove panel, and which is open at the rear side (16)

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of the groove panel (2), characterised in that the locking device (6, 8, 14) further comprises a strip (6) integrated with the other (1) of said panels, termed strip panel, said strip (6) extending throughout substantially the entire length of the joint edge (3) of the strip panel (1) and being provided with a locking element (8) projecting from the strip, such that when the panels are joined together, the strip (6) projects on the rear side of the groove panel (2) with its locking element (8) received in the locking groove (14) of the groove panel (2),
that the panels, when joined together, can occupy a relative position in said second direction (D2) where a play (Δ) exists between the locking groove (14) and a locking surface (10) on the locking element (8) that is facing the joint edges and is operative in said second mechanical connection,
that the first and the second mechanical connection both allow mutual displacement of the panels (1, 2) along the direction of the joint edges (3, 4), and
that the second mechanical connection is so conceived as to allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6).

2. A system as claimed in claim 1, characterised in that when the groove panel (2) is pressed against the strip panel (1) in said second direction (D2) and is turned angularly away from the strip (6), the maximum distance between the axis of rotation of the groove panel (2) and the locking surface of the locking groove (14) closest to the joint edges is such that the locking element (8) can leave the locking groove (14) without contacting the locking surface of the locking groove (14).

3. A system as claimed in claim 1 or 2, characterised in that the locking surface (10) of the locking element (8) is extended from the front side (22) of the strip (6) through a height in said first direction that is less than or equal to 2 mm.

4. A system as claimed in any one of the preceding claims, characterised in that the first mechanical connection is provided by the joint edge (4) of the groove panel (2) engaging, in said first direction, between the joint edge (3) of the strip panel (1) and the front side of the strip (6).

5. A system as claimed in any one of the preceding claims, characterised in that the strip (6) integrated with the strip panel (1) is made of a material different from that of the strip panel (1) and fixedly mounted on the strip panel (1) at the factory.

6. A system as claimed in claim 5, characterised in that the strip (6), at least for one of the two panels (1, 2), is received in a countersunk groove (40; 42) in the rear side (18; 16) of this one panel (1; 2).

7. A system as claimed in claim 5 or 6, characterised in

that the strip (6) is mounted in an equalising groove (40) which is countersunk in the rear side (18) of the strip panel (1) and exhibits an exact, predetermined distance (E) from its bottom to the front side (21) of the strip panel (1),
that the part of the strip (6) projecting behind the groove panel (2) engages a corresponding equalising groove (42) which is countersunk in the rear side (16) of the groove panel (2) and which exhibits the same exact, predetermined distance (E) from its bottom to the front side (26) of the groove panel (2), and
that the strip (6) has at least such a thickness that the rear side (44) of the strip is flush with the rear sides (18, 16) of the panels.

8. A system as claimed in claim 7, characterised in that the strip (6) has such a thickness that it is only partly received in the equalising grooves (40, 42).

9. A system as claimed in any one of claims 5-8, characterised in that the strip (6) is fixed to the strip panel (1) by means of a mechanical connection.

10. A system as claimed in claim 9, characterised in that the mechanical connection between the strip (6) and the strip panel (1) comprises a gripping edge (52) defined by two recesses (24, 50) in the rear side (18) of the strip panel, and tongues, lips or the like (54, 56) which are bent or punched from the strip (6) and which press against opposite outer sides of the gripping edge (52).

11. A system as claimed in claim 9, characterised in that the mechanical connection between the strip (6) and the strip panel (1) comprises a recess (58) in the rear side (18) of the strip panel, and tongues, lips or the like (60) which are bent or punched from the strip (6) and which press against opposing inner sides of the recess (58).

12. A system as claimed in any one of claims 5-11, characterised in that the strip (6) is fixed to the strip panel (1) by means of a binder.

13. A system as claimed in any one of claims 5-12, characterised in that the strip (6) is made of a flexible, preferably resilient material, such as sheet aluminium.

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14. A floor system as claimed in any one of claims 1-4, characterised in that the strip (6) is integrally formed with the strip panel (1), i.e. made in one piece with the strip panel (1).

15. A floor system as claimed in any one of the preceding claims, characterised in that the locking element (8) consists of a locking edge extended continuously along the strip (6).

16. A floor system as claimed in any one of claims 1-14, characterised in that the locking element (8) consists of a plurality of spaced-apart locking elements distributed throughout the length of the strip (6).

17. A floor system as claimed in any one of the preceding claims, characterised in that the panels (1, 2) are rectangular and intended, at each of their four edges (3, 4, 3', 4'), to be joined to a similar panel by a first mechanical connection of the aforementioned type and a second mechanical connection of the aforementioned type, each panel having a first pair of opposite joint edges (3, 4), one of which is provided with a strip (6) of the aforementioned type and the other of which is provided with a locking groove (14) of the aforementioned type, and a second pair of opposite joint edges (3', 4'), one of which is provided with a strip (6') of the aforementioned type and the other of which is provided with a locking groove (14') of the aforementioned type.

18. A floor system as claimed in any one of the preceding claims, characterised in that an underlay (46) of floor boards, foam, felt or the like is fixed to the rear sides (18, 16) of the panels.

19. A floor system as claimed in claim 18, characterised in that the underlay (46) is fixed so as to cover the strip (6) in said second direction at least up to the locking element (8), such that a joint between the underlays (46) of the two adjacent panels is offset in said second direction relative to the joint edges (3, 4).

20. A floor system as claimed in any one of the preceding claims, characterised in that a sealing means, such as a sealing compound, a rubber strip or the like, is provided on the front side (22) of the strip between the locking element (8) and the joint edge (3) of the strip panel to seal against the groove panel (2).

21. A floor system as claimed in any one of the preceding claims, characterised in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to enter the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly towards the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact with the upper corner part of the joint edge (3) of the strip panel (1).

22. A floor system as claimed in any one of the preceding claims, characterised in that the first mechanical connection as well as the second mechanical connection are such that they allow the locking element (8) to leave the locking groove (14) if the groove panel (2) is turned about its joint edge (4) angularly away from the strip (6) while holding the upper corner part of the joint edge (4) of the groove panel (2) in contact with the upper corner part of the joint edge (3) of the strip panel (1).

Patentansprüche

1. Ein System zur Bereitstellung einer Verbindung entlang angrenzender Verbindungskanten (3, 4) zweier Gebäudeplatten (1, 2), insbesondere Bodenplatten, wobei bei der Verbindung:

zwei angrenzende Verbindungskanten (3, 4) zusammen eine erste, mechanische Verbindung bilden, die die Verbindungskanten (3, 4) aneinander in einer ersten Richtung (D1) unter rechten Winkeln zu der Hauptebene der Platten (1, 2) verriegelt, und

eine auf der Rückseite (18, 16) der Platten (1, 2) angeordnete Verriegelungseinrichtung (6, 8, 14) eine zweite mechanische Verbindung bildet, die die Platten (1, 2) miteinander in einer zweiten Richtung (D2) parallel zu der Hauptebene und unter rechten Winkeln zu den Verbindungskanten (3, 4) verriegelt, wobei die genannte Verriegelungseinrichtung (6, 8, 14) eine Verriegelungsnut (14) umfaßt, die sich parallel zu und von der Verbindungskante (4) einer (2) der genannten Platten, Nutenplatte genannt, beabstandet erstreckt und die auf der Rückseite (16) der Nutenplatte (2) offen ist, dadurch gekennzeichnet,

daß die Verriegelungseinrichtung (6, 8, 14) des weiteren einen Streifen (6) umfaßt, der mit der anderen (1) der genannten Platten, Streifenplatte genannt, integriert ist, wobei sich der genannte Streifen (6) im wesentlichen über die gesamte Länge der Verbindungskante (3) der Streifenplatte (1) erstreckt und mit einem Verriegelungselement (8) versehen ist, das von dem Streifen so hervorsteht, daß, wenn die Platten miteinander verbunden sind, der Streifen (6) auf der Rückseite der Nutenplatte (2) hervorsteht, wobei sein Verriegelungselement (8) in der Verriegelungsnut (14) der Nutenplatte

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